AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings (FIGURES 1 through 8) are intended to replace the sheets of drawings original filed with the application. The specific changes to Figures 7 and 8 will be described in greater detail in the Remarks section of this response. The new sheets of drawings add no new matter to the application.

REMARKS

In response to the Office Action mailed December 3, 2009, Applicants have amended the claims, specification, and drawings as will be addressed in greater detail below. Claims 148-219 are pending. The PTO has withdrawn Claims 158-219 from consideration as being drawn to a non-elected invention. Claims 148, 150-152, 154, and 155 have been amended. Support for the amendments can be found throughout the specification and in the original claims as filed. No new matter has been added. Claims 148-157 are presented for examination.

Regarding the Drawings

The drawings were objected to as failing to comply with 37 C.F.R. §1.84(p)(4) because reference characters "1", "2", "3", "4", "5", "6", and "7" were used in both Figures 7 and 8 to designate different structures. For example, reference character "1" was used in Figure 7 to designate a fluid storage vessel and an alcohol introduction point in Figure 8. Applicants have corrected Figures 7 and 8 to comply with 37 C.F.R. §1.84(p)(4). The structures in Figure 8 have been given new reference characters and the specification has been amended to reflect these corrections.

With regard to reference character 7 in Figure 7, the PTO has objected to the drawings as failing to comply with 37 C.F.R. §1.84(p)(5) because the reference character was not mentioned in the description. The specification has been amended to insert reference character 7 after "purge stream" in paragraph **[0134]**.

Regarding the Specification

As detailed above, paragraph **[0134]** of the specification has been amended to clarify that reference character 7 refers to the purge stream. Additionally, paragraphs **[0145]** and **[0146]** have been amended to reflect the corrections to Figure 8 of the drawings. In particular, reference numbers 1-7 as described in the specification in connection with Figure 8 have been amended to recite reference numbers 8-14, respectively.

With respect to the Abstract, the PTO provided a summary of the proper language, format, and content of an abstract of the disclosure in the Office Action. Applicants have considered the summary and believe that the Abstract fully conforms with the requirements as set forth by the PTO.

Regarding the Claim Rejections under 35 U.S.C. §112

Claims 150-152 and 154-155 were rejected as being indefinite under 35 U.S.C. §112, second paragraph. More particularly, the PTO objected to the phrase "such as". Additionally, Claims 150-152 and 154-155 were rejected under 35 U.S.C. §112, second paragraph for including a broad range or limitation with a narrow range or limitation that falls within the broad range or limitation in the same claim. Claim 150 was further rejected for including the limitation "nanoscaled primary particles" for lacking sufficient antecedent basis.

In response to these rejections, Applicants have amended Claims 150-152 and 154-155 to remove the phrase "such as." Furthermore, Claims 150-152 and 154-155 have likewise been amended to address the issue of a claim possessing a broad range or limitation with a narrow range or limitation falling within the broad range or limitation in the same claim. Finally, Claim 150 has been amended to delete the term "nanoscaled", thereby obviating the rejection based upon an alleged insufficiency of antecedent basis.

Regarding the Claim Rejections under 35 U.S.C. § 103

Claims 148-157 were rejected under 35 U.S.C. §103 as being unpatentable over Watkins et al. (U.S. Patent No. 5,789,027) in view of Gupta et al. (US 2002/0000681). According to the PTO, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the method of Watkins et al. in view of the teachings of Gupta et al. to arrive at the claimed invention. Applicants urge that the claims, as amended, are patentably non-obvious over the cited art for at least the reasons set forth below.

Claim 148 has been amended to clarify that there is a certain order in which the various steps are performed to produce a fine particle material. The method includes introducing substances into a vessel and allowing the substances to precipitate and then introducing into the vessel reactant(s) and/or precursor(s) and/or initiator(s) and/or catalyst(s) for chemical reacting with the already introduced and precipitated substances. Thus, the method includes distributing substances as primary particles on a surface before, for example, chemical reactants are introduced into the vessel or obtaining a chemical reaction with the substances distributed as primary particles on the surface. See, e.g. Paragraphs **[0135]** through **[0143}** of the specification. In the preparation of fine particles, chemical reactions occur between already precipitated

substances on the surface and subsequently introduced substances. Claim 148, as amended, reflects the sequential nature of the invention.

Turning to the art cited by the PTO, the abstract of Watkins recites "[m]ethods are described for depositing a film of material on the surface of a substrate by i) dissolving a precursor of the material into a supercritical or near-supercritical solution; ii) exposing the substrate to the solution, under conditions at which the precursor is stable in the solution; and iii) mixing a reaction reagent into the solution under conditions that initiate a chemical reaction involving the precursor, thereby depositing the material onto the solid substrate, while maintaining supercritical or near-supercritical conditions." The teachings of Watkins relate to a method of depositing substances on a surface by promoting precipitation by a chemical reaction occurring while the substances are still present in the solution, i.e. not yet precipitated. The chemical reaction referred to in Watkins is quite distinct from the chemical reaction referenced by the present invention in which the chemical reactions occur with the *precipitate* (as primary particles). Watkins disclose a further aspect pertaining to depositing material within a microporous or nanoporous solid substrate by dissolving a precursor of the material into a solvent. See, e.g. [P3, l29-42] of Watkins. The method includes:

ii) exposing the solid substrate to the solution under conditions at which the precursor is stable in the solution; and

iii) mixing a reaction reagent into the solution under conditions that initiate a chemical reaction involving the precursor, thereby depositing the material within the solid substrate

Notably, Watkins neither teaches nor suggests a second introduction of a substance to chemically react with precipitated particles as presently claimed; instead, the chemical reactions according to Watkins relate to promoting precipitation.

The recitation of Gupta et al. by the PTO fails to cure the deficiencies of Watkins et al. in establishing a *prima facie* case of obviousness under 35 U.S.C. §103. Gupta et al discloses a method and a device for producing nanoparticles and microparticles using acoustic and ultrasonic vibration. The disclosure according to Gupta relates to feeding a dispersion in the form of a jet towards and into contact with a vibrating surface in order to atomize the dispersion into tiny droplets. Particles are formed due to rapid removal of the solvent/solvents by supercritical CO2

from the droplets. See Paragraph [0102] of Gupta et al. According to Gupta et al, the particles are formed while the droplets are still flowing around in the vessel:

At Paragraph [103], Gupta describes the vibration field generated by the horn surface 13 causes vibration streaming inside the particle production vessel which keeps the particles in constant motion. Similarly, at Paragraph [104], Gupta describes the flow rate of CO2 is maintained high enough so that all solvents in the dispersion 3 are removed to obtain dry particles. The process of forming particles according to the Gupta are summarized in [0025]: The dispersion jet once introduced into supercritical fluid and onto the vibrating surface spreads evenly over the surface forming a thin liquid film. A set of wavelets then form on the free liquid layer due to the vibrating surface. The oscillatory vibrations of the liquid surface causes these wavelets to increase in amplitude until the wavelet tips break off and the droplets are emitted from the surface into the supercritical fluid media. Rapid transfer of CO2 into these droplets and the solvent out of these droplets causes them to expand rapidly, leading to a decrease in the droplet's ability to keep the solute molecules dissolved causing the molecules to precipitate as fine particles. Thus, it seems clear that the fine particles according to Gupta are in their final state when they precipitate.

By contrast, Applicants describe a method wherein the fine particles are formed as a result of a chemical reaction between already precipitated substances and subsequent introduction of reactant(s) and/or precursor(s) and/or initiator(s) and/or catalyst(s). Gupta does not disclose a method in which substances are precipitated as primary particles and a subsequent introduction of further substances that reacts with the already precipitated particles. An object of the present invention is to address the quality and availability of fine particles by providing method(s) for production of such material, which allows for the production of more homogeneous fine particles than in the prior art. The resulting products from the method claimed in amended Claim 148 are fine particles with a high purity and/or a controlled particle morphology, and/or small average diameter and/or narrow size distribution, and/or a controlled phase and/or structure. As set forth in Claim 148 and the claims depending therefrom, the method includes precipitation of primary particles and the formation of the final particles subsequent to precipitation. Both Watkins and Gupta teach controlling formation of particles in a dispersion and promoting precipitation of the formed particles.

Neither Watkins nor Gupta disclose chemical reactions between already precipitated substances and a subsequently introduced chemical. Amended Claim 148 and the claims depending therefrom are not *prima facie* obvious as the combination of Watkins and Gupta does not constitute all the steps cited in claim 148. Moreover, a person having ordinary skill in the art would not be motivated to modify the teachings of Watkins and Gupta to arrive at the presently claimed method. There simply is no motivation available to a skilled artisan to combine and adopt the teaching of Watkins and Gupta to deposit primary particles and provide a chemical reaction with the primary particles by a subsequent introduction of substances after the primary particles have precipitated.

For at least these reasons, Claim 148 and the claims depending therefrom are patentably non-obvious over the cited art. Applicants respectfully request that the rejection of the claims therefore be withdrawn.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

In view of the foregoing, Applicants submit that the claims are in condition for allowance. Should there be any questions concerning this application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: April 27, 2010

By: _____

Mallary K. de Merlier
Registration No. 51,609
Attorney of Record
Customer No. 20,995
(619) 235-8550

AMEND

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